SCIENCE ADVISORY COMMITTEE MEETING Minutes 10/18/01

Participants: Scott Bates, Pat Bradley, Ann Brazinski, Joe Calzarette, Ray Chaput, Jim Comiskey, Doug Curtis, Sean Denniston, Bob Ford, Bryan Gorsira, Ellen Gray, Bill Hebb, Dianne Ingram, Lisa Jameson, Jennifer Lee, Melissa Kangas, Dorothy Keough, Marcus Koenen, Duane Marcus, Mikaila Milton, Dale Nisbet, Gopaul, Noojibail, Allan O'Connell, Diane Pavek, Denice Pitman, Doug Samson, Steve Seagle, Jim Sherald, John Sinclair, Craig Snyder, Stephen Syphax, Pat Toops, Jim Voigt, Christina Wright.

Introductions-Ellen Gray

Overview of the I & M program (Ellen Gray)

Presentation Outline
Inventory Update
Vital signs monitoring plan
Roles of the Board of Directors (BOD), Science Advisory Committee (SAC)
Gathering information

I & M Staff
Ellen Gray- Program Coordinator
Christina Wright-Data Manager
Marcus Koenen-Monitoring Coordinator
John Sinclair-Inventories Coordinator
Mikaila Milton-Biological Technician

Natural Resource Challenge—funding to implement I & M
I &M is just one part of the Natural resource challenge—also Exotic Plant Management Teams, sabbatical in the parks, Learning Centers, etc.

I & M Goals
Long-term goal--Initiating ecological monitoring programs
Short-term goal--Completing baseline inventories

There are 32 networks of parks throughout the U.S. They were divided using the ecoregion concept as well as other considerations.

Key Features of the Network Approach
-The I & M program provides new positions and funding.
-These positions and funding are shared by parks and augmented by existing personnel/funds.
-Projects are based on each park's priorities and needs

Our network consists of 11 parks: Antietam Ntl. Battlefield, Catoctin Mountain Park, C&O Canal NHP, Geo. Wash. Mem. Pkwy., Harpers Ferry NHP, Manassas Ntl. Battlefield, Monocacy Ntl. Battlefield, National Cap. Parks East, Prince William Forest Park, Rock Creek Park, Wolf Trap Farm Park. We also include the portion of the Appalachian Trail that runs through our network.

The parks span 4 physiographic regions: ridge and valley, blue ridge, piedmont, coastal plain. The total area for all 11 parks is 30,956 ha.

We take a regional planning approach, not just concentrating on our park lands.

Despite the urban surroundings, there are many significant natural resources in our parks.

I & M prototype parks
There are 11 prototype parks in the U.S. They were established in the early 1990s with the purpose of

sharing information and monitoring protocols with the networks. The prototypes conduct inventory and monitoring at a grander scale than the networks.

Baseline Resource Inventories
Nationwide the NPS is collecting information on 12 baseline inventories. These baseline inventories include:
natural resource bibliography, base cartographic data, geology map, soils map, weather data, air quality, location of air quality monitoring stations, water body location and classification, water quality data, vegetation map, species list of vertebrates, and status and distribution of high priority vertebrate and vascular plant species.

I &M Goals
Our inventory goal is to document the occurrence of at least 90 % of vertebrate and vascular plant species occurring in each park. For species of high priority, we aim to get additional detail on distribution or abundance.

Biological Inventory Status
Ongoing inventories (FY00-FY01): birds, reptiles, small mammals
Upcoming inventories (FY02-FY03): vascular plants, fish, bats

Database Products of the I & M Program
Information to manage natural resources that is shared through comprehensive online databases.

Goals of Monitoring
-identify status and trends in ecosystems health
-provide early warning of abnormal conditions that require intervention
-provide park managers with the information they need to evaluate their management strategies

What is monitoring?
A collection and analysis of repeated observations to evaluate changes in condition and progress towards meeting management goals.

Key Points
-Measurements are repeated.
-The program is relevant to current and future management issues.
-Early warning of abnormal conditions will occur.
-The results will have a link to park management.

Monitoring Benefits
Reduce uncertainty and cost
Increase management success
Measures success of mitigation efforts
Help garner support of the public and other agencies

Key Features
Current funding will build a core program.
Clearly defined goals and measurable objectives.
Data management and reporting are a major critical component.

The difference between vital signs monitoring and biological inventories is that monitoring can encompass more parameters than are part of the inventory.

Funding update
Inventories $686k over 5 years
Monitoring $747k
Water quality $71k

The national program has outlined a set of 7 recommendations for implementing a network monitoring plan.

1) Form a BOD (Board of Directors) and SAC (Science Advisory Committee)

BOD (Board of Directors)
-led by a superintendent (John Howard ANTI)
-members include superintendents or their designee from each park in the network
-I &M coordinator acts as staff to the chair
-BOD makes decisions based on recommendations from SAC
-Promotes accountability

SAC (The Science Advisory Committee) Marcus Koenen

The Science Advisory Committee
-prepares for the scoping session and provides technical support for developing the monitoring plan:
-Chaired by regional I&M coordinator
-Composed of natural resource managers, regional I&M and NRS Staff, and scientists from outside of NPS (federal employees) as well as ad-hoc participants (scientists from non-government agencies)

The goals of the SAC are to:
As a region identify important resources.
Draft lists of threats and management issues.
Draft goals and objectives for the monitoring program.
Define criteria for indicators.
Draft conceptual models.

What is a conceptual Model?
A visual or narrative summary describing the important components of an ecosystem.

We need to decide what the scope of the conceptual model will be, by park, resource, or by region?

What else will the SAC do?
-review monitoring protocols
-review study design

If the group knows of additional members who would be knowledgeable participants, let Marcus Koenen know.

2) Summarize existing data and understanding.
Literature review (Mikaila Milton will talk more about this later.)

3) Scoping workshop
Invite scientists and partners from throughout the region
We will need to decide on an approach to scoping: by network geographic region or park?
By topical focus group? Will we use the Delphi method?

Gopaul Noojibail just completed a decision making process using the Delphi method over the web with the General Accounting Office. He can offer suggestions and information about how that worked.

4) Write workshop report and have it reviewed—external and internal review

5) Prioritize
-decide on priorities and implementation approaches
-select indicators to be monitored
-advise BOD on positions to be hired and where to place them
-advise BOD on data management and reporting methods
-address protocols:
    -Do protocols exist?
    -Is there a need to develop new protocols?

6) Draft the monitoring plan and explain why some indicators were chosen and others were not

7) Review and approval from the WASO (Washington Support Office)

Time frame (tentative)
SAC meetings (Dec 01, Mar, 02, Jun 02, Sept 02)
scoping session fall 02
monitoring priorities fall 02
scoping report winter 03
draft monitoring strategy spring 04
final monitoring plan Jan 05

Dec Meeting
Summarize and prioritize important resources
Summarize and prioritize threats
Summarize park and regional monitoring programs
Discuss scoping strategy

March Meeting
Draft goals and objectives
Draft conceptual model

June Meeting
Develop criteria for vital sign indicators
Draft vital signs

September Meeting
Prepare for scoping workshop
Develop agenda
Create working groups
Invitation list

Future SAC meetings
Review scoping workshop comments
Develop protocols
Sampling design
Data management
Reporting issues
Review monitoring plan

Allen O'Connell asked if we are looking at bringing more people from the parks for the scoping sessions? Ellen Gray said yes, also more scientists from the region. Allen O'Connell has been involved in scoping sessions in the Northeast. He said that it was difficult with the individual focal groups and suggests a

smaller group. Some groups had 1-2 people and some had 12. This was a one-day meeting. Some people involved were very tangential to the parks.

Craig Snyder asked how much of the budget will be considered during the planning process. He sees a limited budget yet a long list of priorities.

Ellen Gray answered that our group would come up with a straw man to be added to or changed by the group, which would also consider cost in the decision making process.

Dianne Ingram.
In the Potomac Gorge project, POGO, we listed threats, feasibility, and budget, with all the information rolled into one thing—we need all the information on all aspects to make decisions.

Marcus Koenen
In contrast to POGO we do have a budget with this project.
Ellen Gray mentioned that if we exclude things such as potential vital signs, we need to have them and explained in the monitoring process incase other funding comes along to pick up monitoring of that indicator.

Jim Voigt asked if this is a regional decision or a park by park decision.

Marcus Koenen--We could group the parks by physiographic regions or develop just one monitoring plan for the entire region. Right now we're open to ideas.

Ellen Gray—With some indicators we will look at every park in the region, while some may apply to just one park. We will try to balance between regional and park priorities.

Jim Sherald.-The landscape region will integrate long-term monitoring with land managers in the county and state. We want the plan to encompass our neighbors.

Marcus Koenen--As we're reviewing monitoring in the parks we are also looking at monitoring going on in the region.

Dale Nisbet --What's been successful in other regions?

Marcus Koenen -We are one of the first regions to go through this process although we do have the prototype parks as examples.

PowerPoint presentation continued:

<u>What step are we working on now?</u>

Gathering Information (Mikaila Milton)

We are in the process of developing questionnaires for resource managers and superintendents.

The questionnaires are based upon a review of resource management plans (RMPs) and regional monitoring efforts.

One of the elements summarized from the RMPs concerns historical inventories and monitoring--past and present.

We are also searching the RMPs for information about park natural history collections, how data is managed and whether NPS databases are updated.

We will be going to all the parks to go over the questionnaires to help us summarize threats, important resources, monitoring activities, and identify needs.

Joe Calzarette summarized what we found at ANTI (Antietam National Battlefield).

Antietam Ntl. Battlefield is a cultural/natural landscape. It is made up of farmsteads with woodlots and stream components. In managing the landscape, the park incorporates cultural resources with natural resource management. The Battlefield is a living landscape.

One of the park's resource management goals is to write a new RMP. The park has relatively good inventories but has monitoring needs. Current Monitoring includes water quality (nitrates and phosphates). ANTI wants to advance the water quality monitoring. They have had a USGS gauging station. In addition they are doing riparian buffers monitoring. The park also monitors white-tailed deer. The deer plan is looking at sex ratio, herd composition, etc.

Discussion:

Dorothy Keough, having been through this process before at U.S. Army Garrison Fort Belvoir, said that listing customer constraints is important.

Ray Chaput -This is the first time we are confronted with much of this information. He requests that we send out copies of the presentation to the group via email e-mail.

Presentation by Doug and Ray on water quality monitoring

In conjunction with I & M, the NCR is providing funding to develop water quality monitoring. Ray Chaput has been hired to help develop the water quality monitoring plan for our network. We will have to measure certain core parameters for each park and do additional tests for specific parks such as karst at Antietam or testing for pesticide runoff.

NRC has provided funding to hire an aquatic ecologist shared with NE region to help develop this plan. The water quality monitoring will be more accelerated than the rest of I &M. It will be done within 2 years. At this point we will hire a plan coordinator to implement the plan and Ray's position will be terminated. At least some of the samples may be sent out to labs for analysis.

We're going to have to come and ask for responses and advise more often from the SAC because of the accelerated plan, but we will follow the same procedures outlined by Ellen Gray and Marcus Koenen. We are hoping to have scoping with the I &M or perhaps sooner. We'll be trying to work with what is already done. For example, the state of Maryland's MBSS program. We will also be looking at Virginia and DC to get help to write the monitoring plan. The National Water Resources division will also help with guidance. They are sponsoring a meeting in November. We will also get information from states and counties.

Ray Chaput gave a presentation on our work so far.

We have been looking at the STORET data, which is a chemical analysis. We're also looking for biological factors as well as environmental and physical habitat and stream morphology. A statistical analysis will be done to determine which parameters will be measured.

The first part of the program will look at what's out there. Maryland has already completed a very extensive survey called the MBSS. They have gone through much of the process that we'll have to go through and have produced a State of the Stream Report. They have established fish and benthic macro invertebrate indices of biotic integrity. They have found that the best indication for stream health is biological data. The STORET data is all chemical. We'll go through all of that, but we're looking to the parks for other data to assess the health of the streams and what we do from here. We want to establish a

good long-term program. We will be sending out a questionnaire, similar to that sent out by the state of Maryland, and will be meeting with resource managers from the parks.

Jim Comiskey. What do we do with this data and how do we integrate it with surrounding areas?

Ray--After we've gathered all the background data we must determine what procedures to follow for our program and the best way to incorporate our program with what other agencies are doing.

Pat Toops-We must first determine what is a healthy range. The group needs to set those standards.

Each park must establish desired future conditions.

Ray Chaput - Desired future conditions will depend on what the waters will be used for, e.g. drinking, swimming, fishing, etc.

Pat Toops recommended that we set our standards high.

Gopaul Noojibail -Does the region have any NAQUA sites to integrate with?
Ray Chaput --I'm not sure.
Doug Curtis--There are none in the parks.
Dorothy Keogh. --There is one in Acotink Creek.

Ray Chaput -Maryland has done such a comprehensive sampling within the state, because of the random sampling process, that their work can also be used for assessing the health of our streams. We also need to decide if we want to do random sampling methods or fixed site sampling.

Pat Bradley-Her office helped with developing MBSS as a regulatory tool to do TMDL for example. They figured out the number of watersheds (1300) to be able to determine which are impaired. If they find impairment, a more intensive survey will be done. Pat said that they are looking to use this as the model for the states to use.

EMAP-MAIA looked at the entire mid-atlantic region at a coarser level and may be useful as well. They came to the same conclusion as Doug Curtis and Ray Chaput at Wolf Trap--the streams are not in good condition. Ray said that silting and runoff are the major problems and the TMDL program does not address this.

Pat Bradley--Not yet.

Jim Voigt- What is the link to management? Streams are in bad shape but what's the next step? How do you foresee integrating this into the plan?

Ray Chaput--Some problems will be insurmountable. A typical Maryland stream is so badly eroded that they are quite a few feet below ground level. He addressed this concern to Paul Kazyak, who said it's much easier to keep streams in good condition than it is to fix damaged ones.

Jim Voigt—If you cannot address the solution, why do monitoring?

Doug Curtis--Its important to try to maintain stream quality at whatever level they are and not let it degrade further.

Ann Brazinski--We will have to involve folks outside our boundaries and be involved in their planning. We've been dealing with this in POGO.

Ray Chaput—All programs have to be linked.

Dorothy Keogh—If we have good information on habitat, we can petition other agencies to manage the resources better. She gave an example where this occurred with VDOT (Virginia Department of Transportation).

Doug Samson gave another position from outside the government. The Maryland DC chapter of The Nature Conservancy has 30 preserves, and 8 of them no longer meet TNC's criteria for biodiversity conservation and will be transferred out of their portfolio. In order to accomplish their mission they need to be very selective. That is the importance of ecoregional planning. They have to make choices—resource limitation drives this. Very few if any of the National Parks in this region were created to protect natural resources. This may or may not be the best place to conserve natural resources. It may be a bad place to do resource conservation. It might be more effective to apply our resources to the best and most important resources in the region and do it with the best available science—do it such that a population or area is viable in the future. If a species is not viable don't work there. TNC does this. Use limited resources to protect something which is viable.

You really need to know the site and work to maintain the viable ones in the future by reducing the threats.

If the NPS mandate is to find out what's good and protect that, then it's a different priority than monitoring in every park.

Bryan Gorsira --There should be different levels of resource protection. Maybe we should spend more effort on maintaining those resources which are good, but shouldn't ignore the rest.

Pat Toops--We are mandated by the Organic Act which set up the Park Service and is made up of three major components. One of these is maintaining the resources unimpaired. We set a standard of future goals and try to reach that.

Ray Chaput—Streams are grouped in three tiers. I believe EPA established these. The third tier represents outstanding water resources, the 2 nd those which can be elevated or improved, and 1st are impaired--don't do much except hold it at that level.

Pat Toops--I think we have to be optimistic. Earlier the management was not as sensitive.

Ann Brazinski—We do have an overall mission, but each park has enabling legislation. This may be a good starting point for prioritization—looking at where that natural resource component is established.

Doug Curtis—Paul-Kazyak says you get your biggest bang for your buck by putting effort into the good and fair streams not the bad ones. Maybe this is something that we need to consider, not to forget the others, but to maintain them at their current condition.

Pat Bradley—The EPA is about to start a 6 million dollar research project, looking at how to characterize watersheds. They are grouping forested, suburban, and urban watersheds and developing reference conditions for each watershed type. This will show for example, the reference conditions for an urban watershed. It will show people that there's a lot that they can do, even in an urban watershed.
The 14 digit Hydrologic Unit Code (HUC scale) will be intensively studied over the next 5 years. If there are any parks that you want to recommend for the study, do so soon. Penn State, etc. will be working on this.

Ellen Gray—Coming back to the strategy of the scoping sessions, we can start a preliminary discussion as to how we want to do scoping. Do we want to group parks which are ecologically similar or consider all parks at once?

Gopaul Noojibail--With the Delphi method, it's best to do the project in small chunks. It's better to break it down into focus groups.

Ellen Gray--We could use Delphi for the scoping session or we might better use it after scoping, once the focus groups have formed. It may work better to give people something to start with.

Dale Nisbet—What is Delphi?

Gopaul Noojibail—It is a decision making tool to get recommendations from various people in multiple iterations. First you establish what your priorities are and send out another questionnaire. Then the participants rank these priorities on importance and by feasibility. Then you take that data and cross them to get a matrix and send it out a third time to show people this is where you stood and this is were everyone else was, giving them the option to change or keep their decision. Everyone gets equal say. It's a quantitative way of getting to a plan.

The hardest part is coming up with the questions. You don't want to bias, so you must ask open-ended questions. The initial data dump was the hardest to deal with.

Stephen Syphax—GWMP and East are both urban corridors and ANTI and MANA could be grouped. This was suggested by Kathy Jope at a previous vital signs workshop.

Ellen Gray—How many groups did you come up with at the workshop?

Jim Sherald--That was never resolved.

Dianne Ingram--Do you think the parks have similar enough resources to do scoping together?

Doug Curtis—The parks are diverse in water quality. I would rather narrow it down. Water will be the guinea pig for scoping.

Jim Voigt—Good idea.

Pat Toops--Which will give us a good answer in a timely manner?

Ray Chaput --We have indicators.

Ellen Gray—Are there other comments or ideas on scoping?

Marcus Koenen--At the next meeting we'll be looking at the park resources based on questionnaires and input from the resource managers and trying to pull together the key resources and threats. We will boil down this information for the group to review and also review the monitoring that other groups are doing.

We should set the next meeting date.

Allen O'Connell--Can we look at the RMPs?

It was decided that it would make more sense for the I&M team to boil down the RMP information for the group into several page summaries. If anyone wants more information we'll send out the full RMP or questionnaire.

Ellen Gray—Some of the management plans are out of date as Bryan Gorsira said. That's why we'll revise and up date the information during each meeting with the parks.

Any suggestions as to a date for the next meeting? **(January 10th at 10:00 AM at GWMP Turkey Run was decided)**

Jim Sherald—This will be an all day affair.

We'll send out minutes from this meeting and a copy of our slide presentation

End of meeting.